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"METACOGNITIVE SKILLS OF PROSPECTIVE TEACHERS AS A PREDICTOR OF ACADEMIC BUOYANCY"

* Dr. Sarah Thomas*[1], Mrs. Kalyani Reddy[2]

[1]*Corresponding Author: Dr. Sarah Thomas, Assistant Professor, St. Ann's College of Education
[2]M.Ed student, St. Ann's College of Education, (Autonomous), .

ABSTRACT

Metacognition plays a critical role in teaching-learning which has always been linked with profound thinking ability. Academic buoyancy reflects an 'everyday resilience' that is essential for the present-generation students who deal with day-to-day academic challenges. The purpose of the study is to investigate the prospective teachers' metacognitive skills and Academic buoyancy to meet challenges and setbacks. The study was carried out on 100 prospective teachers selected randomly from Teacher training colleges of Hyderabad and Ranga Reddy Districts. A self-made questionnaire after the standardization procedure is used to collect data. The research data was analyzed using SPSS and a significant difference was found in the level of metacognitive skills among male and female as well as rural and urban prospective teachers. The researchers also found that there is a significant difference in the academic buoyancy of male and female prospective teachers. Rural and urban pre-service teachers did not show any significant difference in their academic buoyancy. A positive correlation was found between metacognitive skills and academic buoyancy. Careful guidance in recognizing and regulating one's own process of thinking may help learners to solve their academic problems. The study throws light on the significance of equipping the learners with meta-cognitive skills which may help them not only to solve the present academic-related issues but the problems that may arise throughout their lives. Activities that encourage a reflective outlook toward learning should be embedded in the pedagogical transaction which would help them to reflect upon setbacks in an optimistic manner.

KEYWORDS: Metacognitive skills, prospective teachers, Academic buoyancy

INTRODUCTION

Metacognition plays a substantial role in effective learning. It is important not only for students but also for teachers. It is closely associated with intelligence and research has found that those with greater Metacognitive abilities tend to be profound thinkers. The basic concept of Metacognition is thinking about one's own cognition. (Flavell, 1971). It is defined as cognition about cognition which means knowledge of thinking and regulation of one's learning process. Putting in a simple form, it is thinking about thinking.

The concept of resilience is discussed more frequently in a clinical context, the same when discussed in an academic context is referred to as academic buoyancy which is described as a student's ability to cope with academic setbacks and challenges which generally occur in school life, such as poor grades, exam pressure, and difficulty in completing schoolwork (Martin and Marsh, 2008).

Buoyancy, therefore, reflects an 'everyday resilience' that is more relevant for the majority of students who deal with the challenges of academic life. The ability to successfully deal with daily academic setbacks is likely to be influenced by multiple factors. Martin and Marsh (2006) have suggested a number of motivational predictors of academic buoyancy, known as the 5Cs: Confidence (self-efficacy), Coordination (planning), Control (low uncertain control), Composure (low anxiety), and Commitment (persistence)

RATIONALE OF THE STUDY:

This study attempts to explore the relationship between metacognitive skills and the academic buoyancy of prospective teachers and also to understand the differences in the way student teachers respond to everyday setbacks and challenges. By studying academic buoyancy in the college setting, additional information regarding the motivational construct can be furnished. Information from this study will also be important for those interested in higher education retention, an area which has not yet been fully explored. Along with other cognitive and motivational variables, students' feedback about academic stress, pressures, and setbacks and the degree to which it affects confidence, may prove to be significant for practitioners focusing on student retention. A greater understanding of how students respond to challenges and obstacles may provide direction for the development of orientation programs, new interventions designed to elevate students' buoyancy levels, ultimately leading to positive gains among students.

SIGNIFICANCE OF THE STUDY:

Metacognitive strategies accelerate our thinking process which is imperative for teachers as well as students. Cognition is the universal language of the thought process. One of the crises that grip every teacher-trainee is the inability to control and structure the cognitive process in teaching and learning. The teacher training should be sensitized in this regard. It is because of the fact that teacher-trainees are the people on whom the responsibility of inculcating metacognitive skill among the students be shouldered.

OBJECTIVES OF THE STUDY:

- To find out the difference in the level of meta cognitive skills of male and female prospective teachers.
- To find out the difference in the level of metacognitive skills of rural and urban prospective teachers.
- To find out the difference in the academic buoyancy of male and female prospective teachers.
- To find out the differences in the academic buoyancy of rural and urban prospective teachers.
- To find out the relationship between the level of metacognitive skills and academic buoyancy of the prospective teachers.

HYPOTHESES OF THE STUDY:

- There is a significant difference in the level of metacognitive skills of male and female prospective teachers.
- There is a significant difference in the level of metacognitive skills of rural and urban prospective teachers.
- There is a significant difference in the academic buoyancy of male and female prospective teachers.
- There is a significant difference in the academic buoyancy of rural and urban prospective teachers.
- There is a significant relationship between the level of metacognitive skills and academic buoyancy of the prospective teachers.

Variables of the study:

In this study **the independent variables** are

- Gender (male, female)
- Place of location (rural, urban)
- Metacognitive skills

the **dependent variables** is

- Academic buoyancy

Materials and Methods:

The design of the present study takes the status of a **descriptive survey** method.

Design and Administration of the tool:

A self-made questionnaire is used for collecting the data. The tool consisted of 58 items. The statements were to be rated on a five-point Likert scale with options strongly agree (SA), agree (A), not decided (ND), disagree (D) and strongly disagree (SD).

As a part of the pilot study, the tool was administered on 20 teacher trainees to

check the reliability and validity of the test items in the questionnaire. The content validity of the tool was established in due consultation with subject experts. To establish the reliability of the tool the Coefficient of correlation of the scores obtained for the statements was computed. 38 items were retained in the final tool in which 20 items were framed to assess the metacognitive skills and 18 items to assess the academic buoyancy of prospective teachers. Among the 38 statements 27 were positive and 11 were negative statements. The positive statement of the tool is given the scoring order as 1, 2, 3, 4, 5 and a reverse scoring order 5, 4, 3, 2, 1 is followed for negative statements.

Population and Sample:
In the present study, all the teacher trainees from various colleges of Education formed the Population. The sample for the present study comprises of 100 prospective teachers selected randomly using a stratified random sampling technique. The sample comprises of 25 female and 25 male pre-service teachers from the urban area and 25 male and 25 female pre-service teachers from the rural area.

Statistical technique used:
The statistical techniques used in the present study are mean, standard deviation, t-test, and correlation. SPSS was employed for the statistical computation and analysis of data.

Testing of Hypotheses:

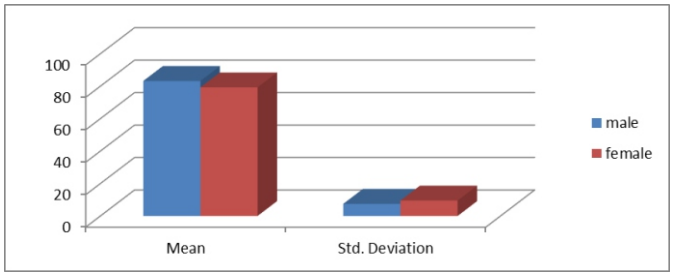
HYPOTHESIS-1
Research hypothesis: There is a significant difference in the level of meta-cognitive skills of male and female prospective teachers.

Table: 1 Difference in the mean, standard deviation and t-value for the level of meta-cognitive skills of male and female prospective teachers.

scription	Sample Size (n)	Mean (m)	Standard Deviation	t-value	Significance level
Male	50	83.22	7.50	2.296	significant at 0.05 level
Female	50	79.28	9.53		

df = 98, t table value = 1.98 significant at 0.05 level

From table 1. The Mean value (M=83.22) obtained for the meta cognitive skills of male prospective teachers is greater than the Mean value (M=79.28) of the female teachers. The Female teachers' Standard Deviation scores obtained for the meta cognitive skills (S.D=9.53) is greater than the Male teachers' scores (S.D=7.50).The obtained t-value (df=98) 2.296 is greater than the table value t(98)=1.98;P<0.05 Therefore the Research Hypothesis accepted. Hence there is a significant difference in the level of meta cognitive skills of male and female prospective teachers.



Graph 1 Difference in the mean and standard deviation in the level of meta cognitive skills of male and female prospective teachers.

HYPOTHESIS-2

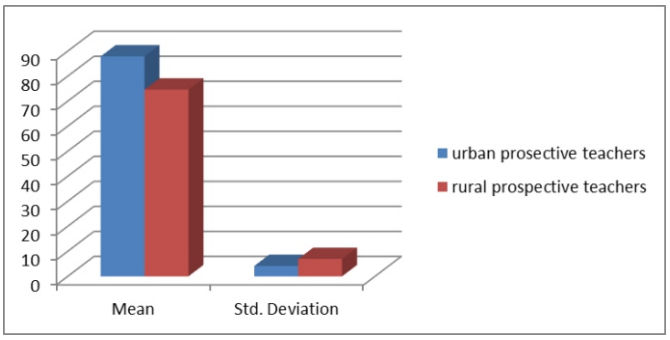
Research hypothesis: There is a significant difference in the level of metacognitive skills of rural and urban prospective teachers.

Table: 2: Difference in the mean, standard deviation and t-value for the level of metacognitive skills of rural and urban prospective teachers.

Description	Sample Size (n)	Mean (m)	Standard deviation	t-value	Significance Level
Rural prospective teachers	50	74.620	6.948	11.590	Significant at 0.05 level
Urban prospective teachers	50	87.880	4.143		

df = 98, t table value = 1.98

From table.2.The Mean value (M=74.620) obtained for the metacognitive skills of rural prospective teachers is less than the Mean Value (M=87.880) of the urban prospective teachers. The Rural teachers' Standard Deviation scores (S.D=6.948) is greater than the Urban teachers' (S.D=4.413). The obtained t-value (df=98) 11.590 is greater than the table value t (98)=1.98;p<0.05 Therefore the Research hypothesis is accepted and the Null hypothesis is rejected. Hence there is a significant difference in the level of metacognitive skills of Rural and Urban prospective teachers.



Graph 2: Difference in the mean and standard deviation in the level of metacognitive skills of rural and urban prospective teachers

HYPOTHESIS-3

Research hypothesis: There is a significant difference in the academic buoyancy of male and female prospective teachers.

Table: 3: Difference in the mean, standard deviation and t-value for academic buoyancy of male and female prospective teachers

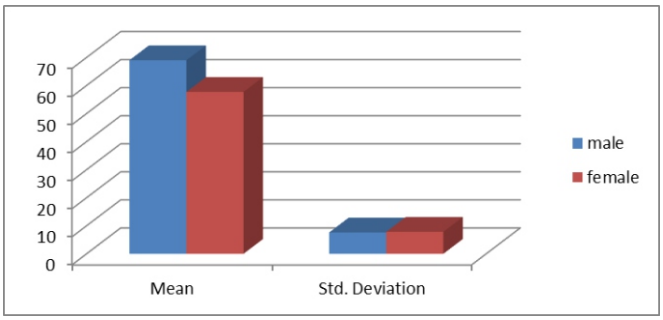
Description	Sample Size(n)	Mean(m)	Standard Deviation	t-value	Significance level
Male	50	69.020	7.614	7.305	Significant at 0.05 level
female	50	57.720	7.853		

df = 98, t table value = 1.98

From table 3. The Mean Value scores (M=69.020) obtained for the Academic Buoyancy of male

df = 98, t table value = 1.98

From table 3. The Mean Value scores (M=69.020) obtained for the Academic Buoyancy of male prospective teachers is greater than the Mean Value (M=57.720) of the female prospective teachers. The female teachers' Standard Deviation scores (S.D=7.853) is greater than the Male teachers' Standard Deviation (S.D=7.614). The obtained t-value (df= 98)7.305 is greater than the table value t (98) = 1.98; p<0.05 Therefore the Research Hypotheses is accepted and the Null Hypotheses is rejected. Hence there is a significance difference in academic buoyancy of male and female prospective teachers.



Graph: 3. Difference in the mean and Standard Deviation for the Academic Buoyancy of male and female prospective teachers

HYPOTHESES-4

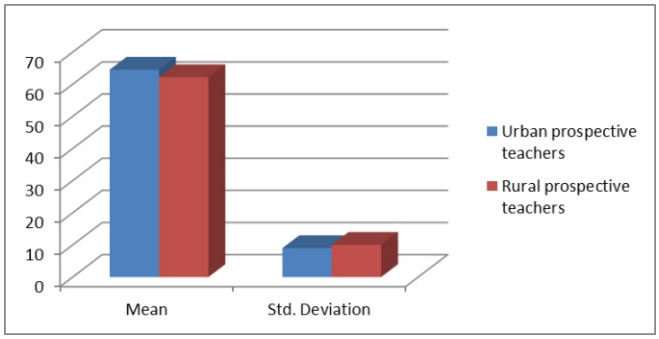
Research hypotheses: There is a significant difference in academic buoyancy of rural and urban prospective teachers.

Table: 4: Difference in the mean, standard deviation and t-value for the academic buoyancy of rural and urban prospective teachers.

Description	Sample			t-value	Significance level
	Size (n)	Mean (m)	Standard deviation		
Rural prospective teachers	50	62.20	10.03	1.226	not significant at 0.05 level
Urban prospective teachers	50	64.54	9.01		

df = 98, t table value = 1.98

From table 4. The Mean Value scores (M=62.20) obtained for the Academic Buoyancy of Rural prospective teachers is less than the Mean Value (M= 64.54) of the Urban prospective teachers. The Rural teachers' Standard Deviation scores (S.D= 10.03) is greater than the Urban teachers' Standard Deviation (S.D= 9.01). The obtained t-value (df= 98) 1.226 is less than the table value t (98) = 1.98; P<0.05 Therefore the Research Hypothesis is rejected and Null Hypothesis is accepted. Hence there is no significant difference in the academic buoyancy of rural and urban prospective teachers.



Graph: 4: Difference in the mean and standard deviation in the academic buoyancy of rural and urban prospective teachers.

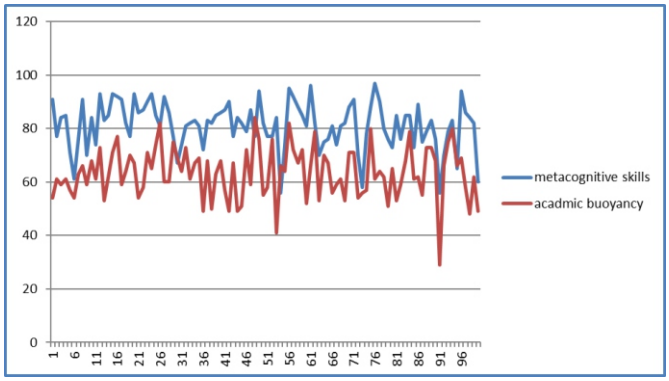
HYPOTHESES-5

Research hypotheses: There is a significant relationship between the level of metacognitive skills and academic buoyancy of the prospective teachers.

Table: 5 Coefficient of correlation between metacognitive skills and academic buoyancy of prospective teachers.

Description Variables	Sample Size(n)	Mean(m)	Standard Deviation	*p*-value
Meta cognitive skills	100	81.250	8.763	+0.301
Academic buoyancy	100	63.370	9.563	

From Table 5.The obtained Coefficient of correlation P-value between Metacognitive skills and Academic Buoyancy is +0.301. Hence there exists a moderate positive correlation between Metacognitive skills and Academic Buoyancy. Therefore the Research Hypothesis is accepted Hence there is a significant relationship between the level of metacognitive skills and the academic buoyancy of prospective teachers.



Graph: 5 line graph representing the Co efficient of correlation between metacognitive skills and academic buoyancy of the prospective teachers.

Results and Discussions:

- **There is a significant difference in the level of metacognitive skills of male and female prospective teachers.**

It was found that the mean scores obtained for meta-cognitive skills are found to be higher in the case of male teachers as compared to that of female teachers.; this probably is due to the fact that male pre-service teachers use self-regulating meta-cognitive learning strategies to enhance their abilities to learn while their female counterparts adopt a more superficial approach to learning. The reasons can also be attributed to the difference in the thinking and learning styles of male teachers and female teachers.

- **There is a significant difference in the level of metacognitive skills of rural and urban prospective teachers.**

It was found that the mean scores obtained for meta-cognitive skills were found to be higher in the case of urban teachers as compared to that of rural teachers; this probably be due to the fact that urban teachers have better facilities, greater resources, opportunities, and are provided with better learning experiences when compared with that of rural counterparts enabling them to be better reflective practitioners using metacognitive strategies in the learning process. Highly qualified lecturers who are available in urban educational institutions may also promote a healthy learning environment promoting meta-cognitive skills among pre-service teachers.

- **There is a significant difference in the academic buoyancy of male and female prospective teachers.**

It was found that the mean scores obtained for academic buoyancy was found to be higher in the case of male teachers as compared to that of female pre service teachers; this probably be due to the fact that male students can be energized and driven to achieve to their potential and are also equipped to deal effectively with academic setbacks and study pressure in the educational setting. The way of dealing with academic setbacks is different for male and female. The reason may be that females are sensitive, emotional when compared to male prospective teachers.

- **There is no significant difference in the academic buoyancy of rural and urban prospective teachers.**

The academic buoyancy of rural and urban prospective teachers is not significantly different as the ability to face challenges and setbacks of everyday life is more of an intrinsic trait that may not be affected by the place of the locale where one resides.

- **There is a significant relationship between the level of metacognitive skills and academic buoyancy of prospective teachers.**

The pre service teachers with high level of metacognitive skills are found to possess greater academic buoyancy. The ability to think deeply about their own learning , regulate,monitor and evaluate their own academic development in reaching goals, help them to have an optimistic outlook which in turn develop academic buoyancy.

CONCLUSION:

The world is becoming more complex, and information-rich, with more options which demand fresh thinking. With these changes, the importance of Metacognitive Awareness as an educational outcome can only grow. Therefore, it is clear that Metacognition is a multi-faceted topic of research. In order to achieve observable improvements, it is necessary to tailor the metacognitive awareness to the domain and blend it seamlessly into the teaching and learning process. Transposing the findings of the present study poses big challenges. With no doubt the present study could be considered as a yardstick in promoting the Meta cognitive Awareness among the learner community.

Every scientific study bears some educational implications. The following are the educational implication of the present study.

- The present study turns our attention to the significance of Meta cognitive skills. This skill helps the learners think about their own learning more explicitly, helps to set goals, monitor and evaluate their own academic development.
- Innovative teaching methods and learning activities need to be included in the curriculum that arouse and develop the Meta cognitive level of students.
- Meta cognitive ability should be developed among school students which will help them to reflect on their learning methods, their performance in the class room activities and improve their academic achievements accordingly.
- The curriculum framers should include activities based on meta cognitive skills, especially effective study skills in a more comprehensible way.
- The application of Meta cognitive strategies such as self-awareness and self-monitoring helps to develop independent learners who can control their own learning and learn how to learn for life.
- Use of Meta cognitive strategies enables students to understand and transfer their learning in different situations that ultimately improve their learning. Students should therefore be encouraged to learn subjects by using Meta cognitive strategies that may help them in better information management, planning and monitoring activities for attaining goals to understand the errors while evaluating the process of learning. Teaching through Meta cognitive ability will improve the academic performance of the students and make them expert learners.

RECOMMENDATIONS:

- Curriculum should be framed to include activity based Meta cognitive skills which should be made an integral part of pedagogy, irrespective of the cognitive styles of education. The profound influence of the Meta cognitive approach on teacher training should be felt in terms of modifications of teacher training curriculum which should emphasize specific behavioral techniques, process based instruction, cognitive curriculum and learner centred and self directed learning activities.
- Adequate effort should be made by NCTE to introduce cognitive educational theory and techniques into teacher education programmes.
- The results revealed that teacher trainees with high meta cognitive ability also possess high academic buoyancy as both the variables are positively correlated to each other. Therefore, teacher educators should arrange instructional methods, classroom activities in a constructivist learning environment which would help in the promotion of both the variables.
- The present study provides a strong mandate for infusing practices that support metacognitive processes into classrooms. In educational institutions, the teachers should improve their students' metacognitive awareness in order to improve their learning abilities. As the achievement is likely to be higher. students happen to know more about effective learning strategies, their classroom Thus it is recommended to creating a metacognitive learning environment in a classroom which is very vital in helping students in their overall development.

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